Feb. 16, 1926. 1,573,542

J. A. DICKERMAN ET AL

WASHING MACHINE

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Fig. 1

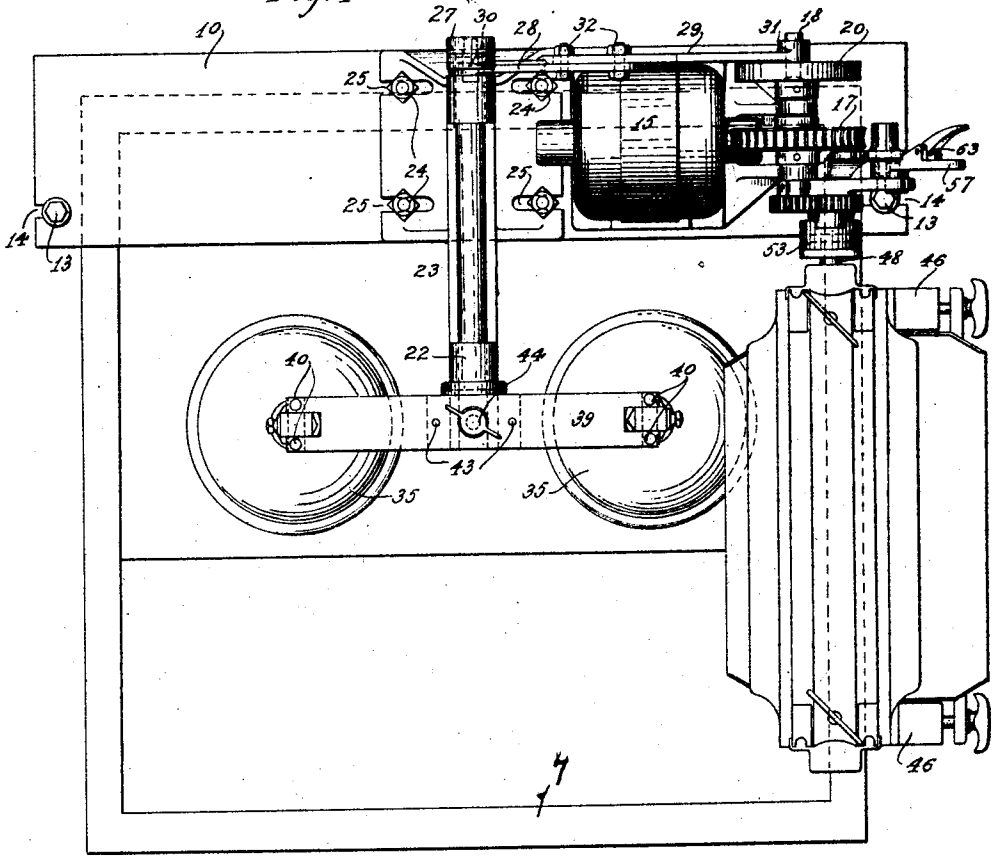
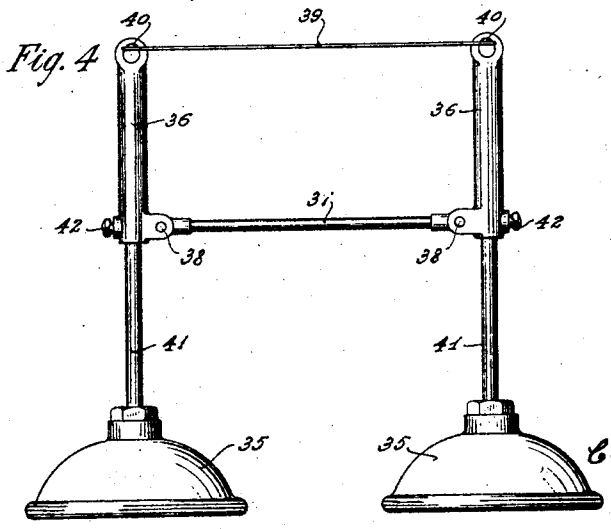


Fig. 4



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Fig. 2

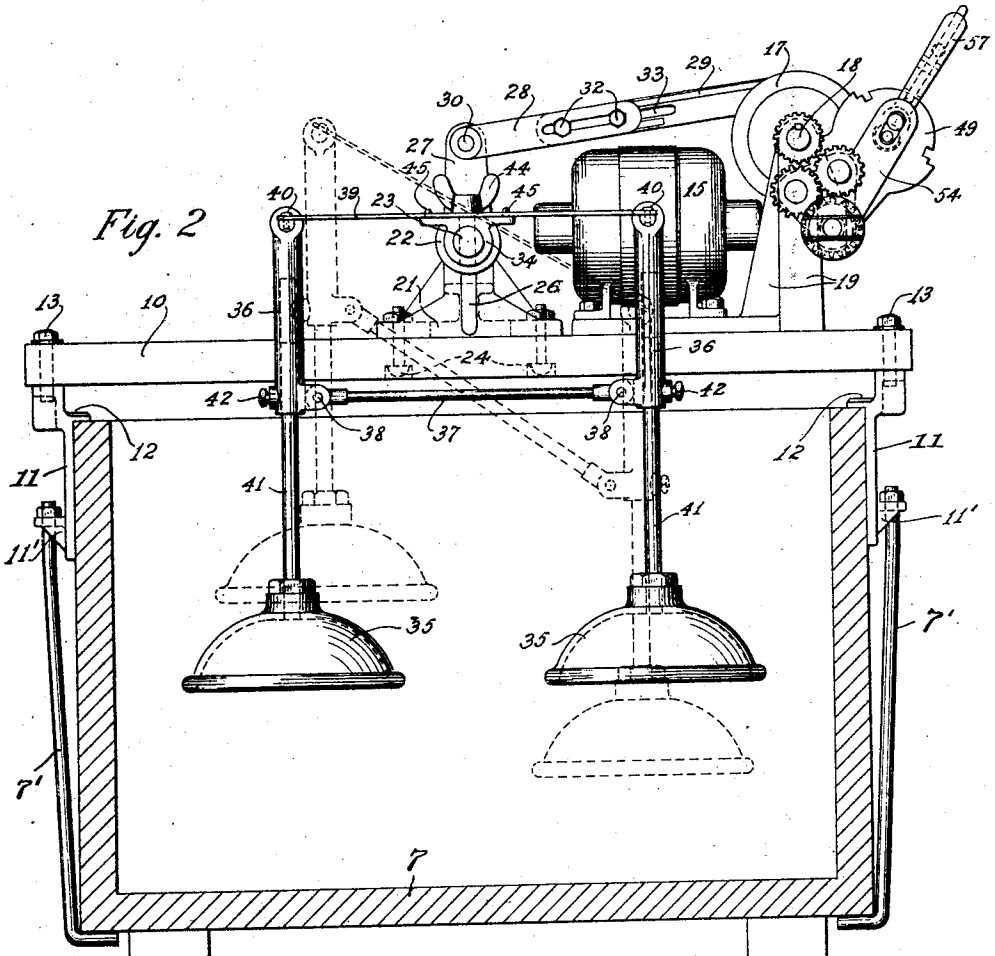
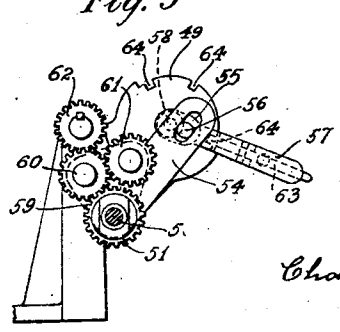


Fig. 5



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Fig. 3

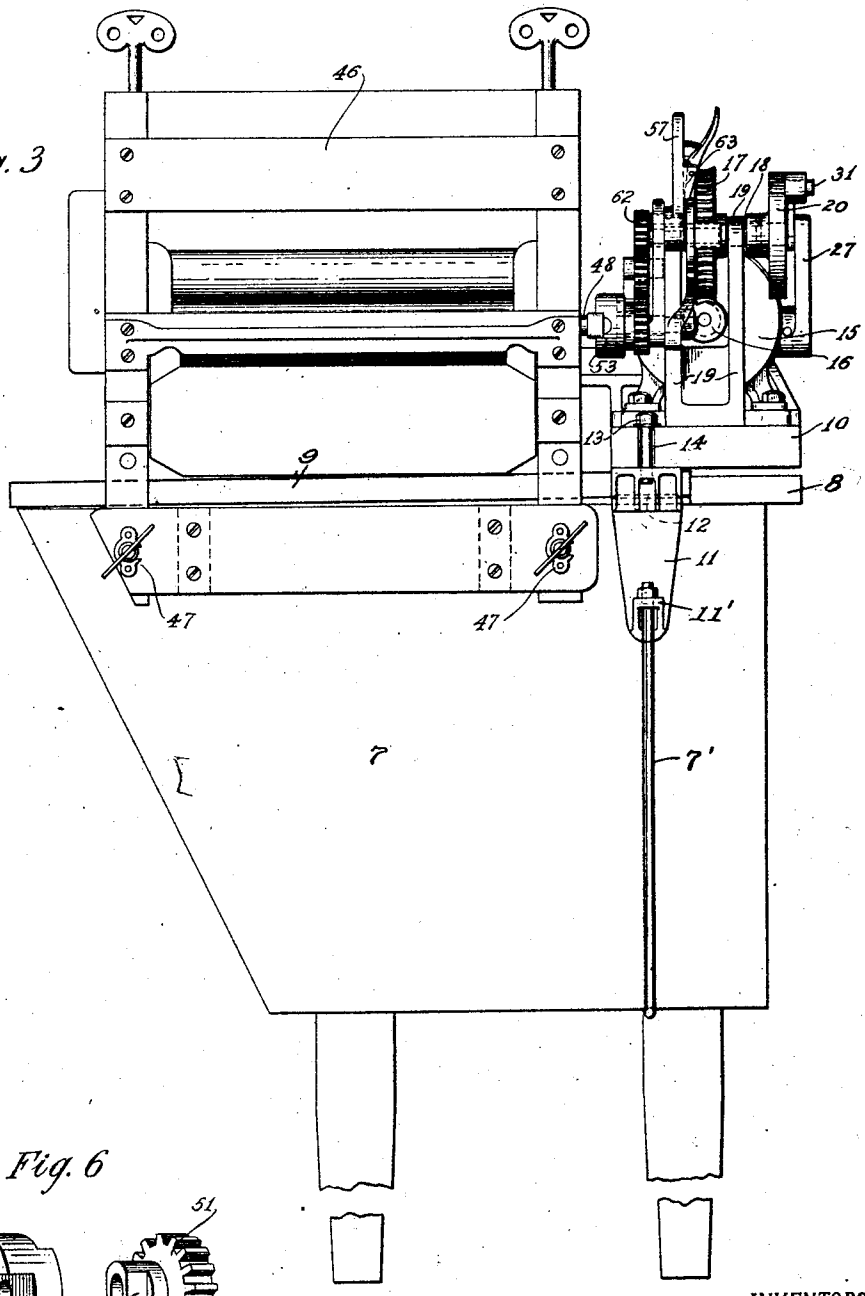
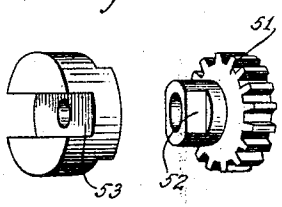


Fig. 6



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Patented Feb. 16, 1926. 1,573,542

UNITED STATES PATENT OFFICE.

JOHN A. DICKERMAN AND HERBERT V. LECKIE, OF BRIDGEPORT, CONNECTICUT, ASSIGNORS TO THE DAWN MANUFACTURING CO., OF STRATFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

WASHING MACHINE.

Application filed May 19, 1921. Serial No. 470,898.

To all whom it may concern:

Be it known that JOHN A. DICKERMAN and HERBERT V. LECKIE, citizens of the United States, and residents of Bridgeport, in the county of Fairfield and State of Connecticut. have invented certain new and useful Improvements in Washing Machines, of which the following is a specification.

This invention relates to a new and improved washing machine of the type adapted to be detachably mounted upon a stationary wash tub.

An object of the invention is to produce a power operated washing machine of simple, practical and economical construction which will be efficient and reliable in operation.

A further object is to devise a machine of the present character provided with novel and improved mechanism for reciprocating the pounders, and with simplified mechanism for controlling the operation of a detachable wringer capable of use in connection with the washing machine and designed to be operated from the source of power which operates the pounders of said washing machine.

Further objects are to provide a machine which can be detachably mounted upon any stationary wash tub without in any manner changing the construction of said wash tub; to provide said machine with detachable pounders which can be easily and quickly removed when this is desirable; to provide novel means for making the detachable connection between said pounders and the mechanism by which they are operated and to so construct said means that said pounders can yield under excessive resistance; to provide a bearing for the operating shaft for the pounders which will be adjustably positioned on the platform of the washing machine and with relation to the driving mechanism thereof; and to provide an adjustable connection between said driving mechanism and said operating shaft.

With the above and other objects in view the invention comprises the construction, arrangement and combination of parts as now to be fully described and hereinafter specifically claimed, it being understood that such changes in details of construction and arrangement of parts may be made as fall within the spirit of the invention and the scope of the appended claims.

In the accompanying drawing forming a part of this specification,

Fig. 1 is a top plan view of the washing machine complete as when in use, showing a wringer applied to be operated by the source of power which operates the pounders;

Fig. 2 is a front elevational view of the machine with the wringer removed, showing a wash tub in section;

Fig. 3 is a side elevational view looking from the right in Fig. 1 with the pounders removed;

Fig. 4 is a front elevational view of the pounders and their associated parts removed from the operating shaft;

Fig. 5 is a detail elevational view of the mechanism for controlling the operation of the wringer; and

Fig. 6 is a perspective view of the wringer operating gear and its coupling detached.

Referring to the drawing, 7 represents a wash tub and 8 a cover member such as commonly extends across the rear top portion of a wash tub, and to which the hinges are usually attached. 9 represents a removable cover member, see Fig. 3 which may be such as are commonly installed with tubs of this kind, and for the purpose of our invention is detachably positioned on the tub, the rear portion being slid in under the platform and positioned upon the lip 12 and top edge of the tub in a manner to cover the same.

The brackets 11, of which there are two, each include a lip 12 that rests upon the top edge of the sides of the tub, and are further provided with a shoulder 11′ upon the outer side, that has a hole therethrough to receive the threaded end of the clamping bolt 7′ whose lower bent end portion engages the

under side of the tub. There are obviously two or more of these brackets, one on each side of the tub. The upper end portion of the brackets are adapted to be engaged by bolts 13 that extend through slots 14 cut longitudinally in the end portions of the platform.

The driving mechanism for the pounders of the washing machine is mounted upon platform 10 and includes a motor 15 the shaft of which carries a worm 16 adapted to mesh with a gear 17 fixed upon a shaft 18 mounted in bearings 19 upon said platform, said shaft 18 also having fixed thereon a disk 20. Also mounted upon platform 10 is a bracket 21 supporting bearings 22 for the rocker shaft 23 by means of which the pounders are reciprocated. As will be noted, the connection between platform 10 and bracket 21 is an adjustable one, said connection being made by means of bolts 24 passing through the platform and through slots 25 in the ends of the bracket, whereby the bracket can be set at any preferred distance from the motor 15, and bearings 22 are supported from bracket 21 by means of ribs 26. Upon one end of the rocker shaft 23 an arm 27 is fixed, and an adjustable connection between the outer end of this arm and the outer portion of disk 20 consists of a pair of links denoted by 28 and 29, respectively, said link 28 being pivoted upon arm 27 as indicated at 30, said link 29 being pivoted upon disk 20 as indicated at 31, and the adjustable connection between said links being made by means of bolts with nuts, represented by 32, passing through slots 33 in said links. It is evident that oscillatory movement is imparted to rocker shaft 23 when the motor is in operation, said movement being imparted through worm 16, gear 17, disk 20, links 28 and 29, and arm 27, the pivotal point 31 turning freely in its gearing in link 29, and the disk 20 serving as a crank whereby the adjustable connection, comprising links 28 and 29, is reciprocated to oscillate arm 27.

A bracket member 34 fixed upon that end of a rocker shaft 23 which is opposite arm 27 is for the purpose of detachably supporting the novel means associated with the pounders 35. As shown more clearly in Figs. 2 and 4, said means comprises a pair of tubes 36, the lower ends of which are connected by a rod 37 having its opposite ends pivoted to the tubes as at 38, and the upper ends of which are connected by a flexible or spring member 39 having its opposite ends hingedly connected to the tubes as at 40, said rod and spring member being parallel with each other. Bars 41 extending upward from the pounders are adjustable in the tubes and are fixed in any position by means of set screws 42. The upper face of bracket member 34 is flat to receive the spring and is provided with means for securing the same to the bracket, such for instance as a plurality of projections 45, two as shown, preferably arranged adjacent each other in one member and adapted to enter small holes 43 in the other member 39. Numeral 44 denotes a thumb screw removably positioned in the bracket member 34 and passing through a third hole in the spring member, the head of said thumb screw engaging the upper face of said spring member when turned home in said bracket member, as will be understood. It will be evident that when the rocker shaft is oscillated to reciprocate the pounders, the spring member 39 provides means whereby the pounders can yield under excessive pressure, and while the thumb screw and the protuberances provide means for positively holding the spring member in operative position, said spring member, and consequently said pounders, can be removed from the washing machine by simply removing thumb screw 44 and lifting the spring member from the protuberances. By reason of the fact that links 28 and 29 are adjustably connected with each other, the pounders and the means by which they are supported from the rocker shaft can be located at any desirable position with respect to a wash tub.

A wringer, denoted by 46, can be supported in any preferred manner upon a side edge of the wash tub, as denoted generally by 47, and in position to be operated from motor 15, numeral 48 denoting the shaft of said wringer. A bracket arm, 49 projecting from one of members 19 carries a stud 50 serving as an axis for the wringer operating gear 51 carrying a hub 52 upon which a coupling 53 is mounted and to which the wringer shaft 48 is detachably connected. A lever 54 having its lower end pivoted on stud 50 has an elongated, longitudinally arranged slot 55 in its upper end, said slot receiving a pin 56 upon the manipulating handle 57 itself pivoted upon bracket arm 49 as at 58. Lever 54 carries an extension 59 in which a pair of pinions 60 and 61 are mounted, said pinions meshing with each other as shown and each being capable of meshing with a small gear 62 fixed upon shaft 18 and arranged at the end thereof which is opposite disk 20. It will be apparent that either of pinions 60 or 61 may be in mesh with small gear 62 to rotate the wringer shaft in preferred direction, or neither of said pinions may be so in mesh when it is desired that the wringer shaft be not rotated. That is to say, by simple manipulation of handle 57 the lever 54 may be swung on its pivot to position either or neither of pinions 60 and 61 in mesh with gear 62. When said handle is in alignment with lever 54, as it is shown in Fig. 2, neither of said pinions 60 and 61 will be in

mesh with gear 62 and the wringer shaft will be stationary. When said handle is thrown to the position shown in Fig. 5, pinion 60 will mesh with both of gears 62 and 51, but when said handle is thrown to its opposite position pinion 61 will be in mesh with gear 62 while pinion 60 will be in mesh with gear 51. Obviously, arrangement is made for rotating the wringer shaft in opposite directions. Any convenient means may be provided for locking the manipulating handle in its adjusted positions. As shown, said handle is provided with a spring pressed detent 63 and bracket arm 49 is notched as at 64 to receive said detent.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent is:

1. The combination with a wash tub, a platform, means for removably attaching the end portions of the platform to the sides of a tub, a motor, a bracket adjustably mounted upon the platform for longitudinal adjustment to center the same with respect to tubs of different widths, a rotatable shaft mounted solely within the bracket, longitudinal adjustable operating connections between the motor and shaft, a cross arm and pounders removably attached to the side of the end portion of the shaft.

2. In a washing machine, a platform, a motor mounted thereon and having a worm shaft, a gear meshing with said worm shaft, a shaft upon which said gear is fixed, a crank fixed upon said shaft, a rocker shaft adjustably mounted upon said platform, and an adjustable driving connection between said crank and rocker shaft, said adjustable connection comprising a pair of links adjustably connected to each other, one of said links constituting the arm of said crank and the other of said links being pivotally connected with an arm fixed upon said rocker shaft.

3. In a washing machine, a plurality of pounders and means by which the same are reciprocated, said means including a rocker shaft, a bracket member fixed thereon, a spring member secured upon said bracket member, tubes pivoted upon the ends of said spring member, a rod between said tubes and pivoted thereon, and bars extending from said pounders and adjustably engaging said tubes.

4. In a washing machine, a plurality of pounders and means by which the same are reciprocated, said means including a rocker shaft, a bracket member fixed thereon, a spring member detachably fixed upon said bracket member, arms supporting said pounders and to which the opposite ends of said spring member are pivoted, and a rod extending between and pivoted upon said arms.

5. In a washing machine, plurality of pounders and means by which the same are reciprocated, said means including a rocker shaft, a bracket member fixed thereon, and having a flat surface, protuberances extending from said surface, a spring member having holes to receive said protuberances, a thumb screw for detachably securing said spring member upon said bracket member, arms supporting said pounders and to which the opposite ends of said spring member are pivoted and a spacing rod extending between and pivoted upon said arms.

6. In a washing machine, pounders, a rocker shaft having a bracket member, and means for detachably securing said pounders upon said bracket member, said means including arms extending from said pounders, a spacing rod extending between intermediate portions of said arms and pivoted thereon, a spring having its opposite ends pivotally connected with the upper ends of said arms, said spring having a plurality of holes intermediate its ends and said bracket member having protuberances adapted to enter certain of said holes, and a thumb screw adapted to enter one of said holes and to removably enter said bracket member.

7. In a washing machine, a plurality of pounders, and means for reciprocating them including a rocker shaft adapted to be oscillated about its longitudinal axis, means adapted to oscillate said rocker shaft, a spring arm supported by said rocker shaft and projecting at right angles at each side thereof, said pounders being associated with the ends of said arm and adapted to reciprocate when said shaft is oscillated, and means to hold said pounders in operative position.

8. In a washing machine, a plurality of pounders, and means for riciprocating them including a rocker shaft adapted to be oscillated about its longitudinal axis, means adapted to oscillate said rocker shaft, a cross arm removably attached to one end of said shaft and projecting at right angles at opposite sides thereof, and adapted to yield in a vertical plane, said pounders being associated with the ends of said arm and adapted to reciprocate when said shaft is oscillated and adapted to be removed together with the cross arm, from the shaft.

9. In a washing machine, a plurality of pounders and means by which the same are reciprocated alternately in an up and down vertical direction, said means including a rocker shaft, a bracket member fixed thereon, and means detachably supporting said pounders on said bracket member and including means adapted to pivotally support said pounders in spaced parallel relation, and to maintain them in substantially vertical position during their alternate up and down movement.

10. In an attachment for wash tubs, a

platform, means for removably securing the platform to the top edge of a tub, a motor, a bracket adjustably mounted upon the platform for longitudinal adjustment to center the same with respect to tubs of different widths, a rotatable shaft mounted solely within the bracket, longitudinally adjustable operating connections between the motor and shaft, a cross arm and pounders removably attached to the side of the end portion of the shaft.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 16th day of May, A. D., 1921.

JOHN A. DICKERMAN.
HERBERT V. LECKIE.